# THE RADICAL CURE OF VARICOCELE.[1]

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I HAVE ventured to bring forward for consideration an old and comparatively unimportant subject. My principal reason for its introduction is to ascertain, if possible, from the members of this society their experience in the operative treatment of varicocele as well as their opinion as to the best method of effecting a radical cure. It is not my intention to discuss the many methods of treatment which have been proposed in the past, but rather to confine myself to a brief consideration of the operations which, as far as my observations go, are practised by the surgeons in this vicinity. For the sake of convenience I shall speak of three methods: first, the subcutaneous; second, the open; and, third, the method of ablation. Of the operations belonging to the first method, that of subcutaneous ligation of the spermatic veins with sterilized silk or catgut ligatures has given the best results. It is simple, easy of performance, and under proper antiseptic precautions very safe, and in addition necessitates but a short period of confinement. As the operation is so well known, I feel that it is unnecessary to describe the manner in which it is performed. With all the advantages which have been claimed for it, its application, however, may be said to be limited to the cases of small varicocele, which require only a single ligature. For large or even moderate-sized varicoceles, where two or more ligatures are required, this operation is open to objection, and is not unattended with danger. It is uncertain as regards radical cure, as we can never be sure that all

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of the affected veins are included in the ligature, a condition which is absolutely essential to prevent recurrence of the disease. Another objection is the liability of placing the ligature too close to the testicle, a proceeding which may be followed by pain and induration of the gland, thereby interfering with a rapid and painless convalescence. Then, again, there is the danger of puncturing with the needle one of the enlarged veins, an event which may not be of great importance, but one which has been attended with unfortunate results. Before the days of antiseptic surgery the subcutaneous method was the one universally employed, as the open method was almost always followed by suppuration and frequently by fatal septic phlebitis. Since the introduction of the antiseptic wound treatment the open operation has been revived, and with such favorable results as to give it the preference with many surgeons. As ordinarily performed, the affected veins are exposed through a scrotal incision, a double ligature of silk or gut is placed around them, and the portion of the varicocele included between the ligatures is excised. The wound is closed with or without drainage, as the operator may prefer, and an antiseptic dressing applied.

The operation has been modified by W. H. Bennett,[1] who not only excises the dilated veins, but at the same time effects an immediate and permanent shortening of the cord. Before the operation, with the patient in the standing position, he estimates by the eye, or better by a tape measure, the degree of elongation of the cord, and thus decides on the amount of the varicocele to be resected. Through an incision, which need not exceed one and a half inches in length, he exposes the fascia which immediately surrounds the varicocele, but does not actually denude the veins. A catgut ligature is passed around the fascia with its included veins, and drawn down to a point as near the testicle as is thought proper and then securely tied, the ends being left long. The varicocele above the ligature is then freed, together with its sheath, by the finger from the surrounding tissues for a distance long enough to allow the portion to be excised to be

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drawn out of the wound. A second ligature is then passed around the upper end of the exposed veins and tied, the ends of the ligature also being left long. The portion of the varicocele included between the ligatures is divided above and below, at a distance not less than a quarter of an inch from the corresponding ligature, and is then removed. The cut ends of the stumps are then approximated and kept in permanent apposition by knotting together the ends of the upper and lower ligature, thus bringing the testicle up to its proper level. The ligature ends are cut off quite short.

By leaving the fascia which immediately surrounds the varicocele intact two objects are attained,—

(1) The certainty of passing the ligature around all of the affected vessels, as none of these ever lie outside of the fascia; and,—

(2) The prevention of any material chance of recurrence of the abnormally dependent position of the testicle, which is probable if the veins are actually denuded before the ligatures are applied and the stumps brought together in the manner described below, since it is manifest that the weight of the testis would tend to drag the veins considerably out from the sheath above, whereas the fascia, if included in the ligatures, not only obviates this tendency, but, in fact, also carries the weight of the dependent organ without stretching it to any considerable extent.

Little or no pain follows the operation; the patient is confined to bed about a week, and is able to resume work in a fortnight, wearing a suspensory bandage, which can be left off in a month.

The open method is preferable to the subcutaneous in that it is as simple in execution, is more certain in its results, and when performed under antiseptic precautions is attended with no more risk.

Ablation of the scrotum, a method which has been extensively practised in this city, has been followed so frequently by recurrence that many surgeons have abandoned it. Frequent recurrence is a natural sequence, as the operation does not

remove the cause of the trouble, and, owing to its elasticity, the scrotum rapidly stretches and resumes its former length. Combined with subcutaneous ligation or open excision of the veins, it has given good results, but the success should be credited rather to the occlusion of the veins than to the shortening of the scrotum.

My experience in the operative treatment of varicocele is limited to nineteen cases, the majority of which were in hospital practice. In two cases subcutaneous ligation was performed, once with sterilized gut and once with sterilized silk. The varicoceles were of moderate size, and in neither case was there elongation of the scrotum. Both did well, and were discharged in seven and eleven days respectively.

In the case where catgut was used there was recurrence in a few months; in the other, the result was satisfactory two years after operation.

Subcutaneous ligation with catgut combined with ablation of the scrotum was performed in one case, and the patient was discharged from the hospital in eighteen days. Four months afterwards recurrence took place and excision of the veins was refused.

In three cases ablation of the scrotum with the aid of Henry's clamp was resorted to. The varicoceles were rather large, and in one case the veins on both sides were affected. The wounds healed *per primam*, and the average duration of confinement was eighteen days. In two of these cases there was recurrence, the other one was never seen after his discharge from hospital.

In eight cases open excision of the veins combined with ablation of the scrotum was practised. Five were of large size, the other three of moderate size, and in all the scrotum was elongated.

In six the wound healed promptly, and beyond some œdema of the scrotum and slight tenderness of the testicle nothing was noted. The average duration of confinement was eighteen days. In one case convalescence was delayed by a secondary hæmorrhage from a scrotal vein, necessitating the reopening

of the ablation wound, turning out some clots and ligation of the bleeding vessel. In one case there was suppuration, and the formation of a small abscess at the site of one of the ligatures. This was a case of large varicocele, and the veins were tied off in several packets, thus requiring the use of several ligatures. Suppuration appeared on the eighth day after operation, whereupon the excision wound was reopened and a small amount of pus containing a sloughing catgut ligature was evacuated. It may be of interest to note in this case that for three days preceding the evacuation of the abscess the patient suffered from paroxysmal hæmoglobinuria. Repeated urinary examinations revealed no lesion of the kidney, and a cystoscopic examination of the bladder was negative. With the evacuation of the pus the urine resumed its normal color, and remained so as long as the patient was in the hospital. Of these eight cases, five were seen some months after operation and there was no recurrence; the other three were not heard from.

In five cases excision of the veins according to Bennett's method was carried out. Four were of moderate size, one a very large one, and in all the scrotum was elongated. All healed by primary union and were thoroughly satisfactory, and the average duration of confinement to hospital was fourteen days. Four have been seen at periods varying from six months to two years after operation, and the results are very satisfactory. In all the four cases the shortening of the cord was maintained, the scrotum fitted closely about the testicle, and at the site of the ligatures slight induration remained.

As a result of my limited experience, I will merely state that my preference is for the open method, which is best illustrated by Bennett's operation, as the one most likely to effect radical cure of varicocele.